Community Planning & Economic Development
Planning Division
250 South 4th Street, Room 110
Minneapolis, MN 55415-1385

City of Minneapolis
Department of Community Planning & Economic Development - CPED

MEMORANDUM

TO: Heritage Preservation Commission

FROM: John Smoley, Kevin Carroll, and Steve Maki, CPED

DATE: February 15, 2011

RE: Legacy Amendment Grant Update, Grain Belt Office Building

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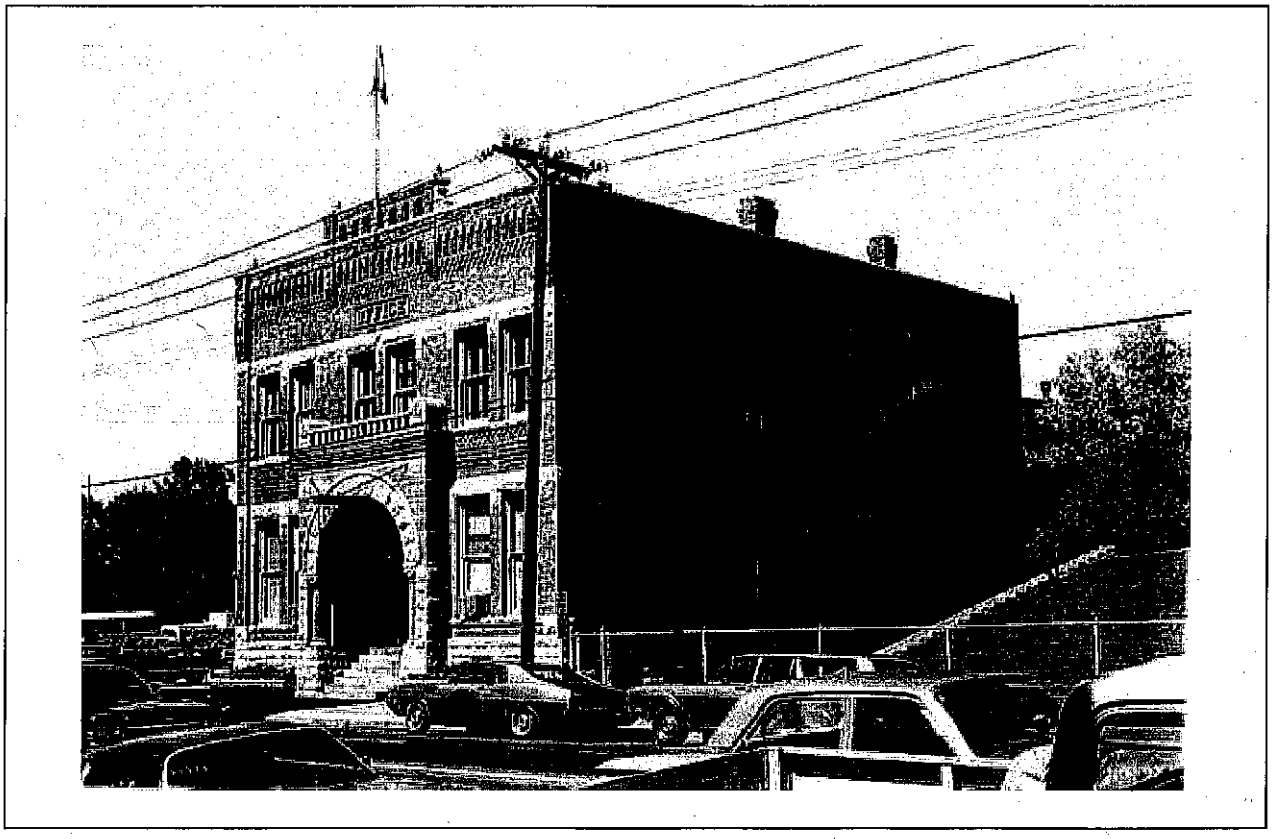

Figure 1. 1215 Marshall Street Northeast, 1972, source: Minnesota Historical Society

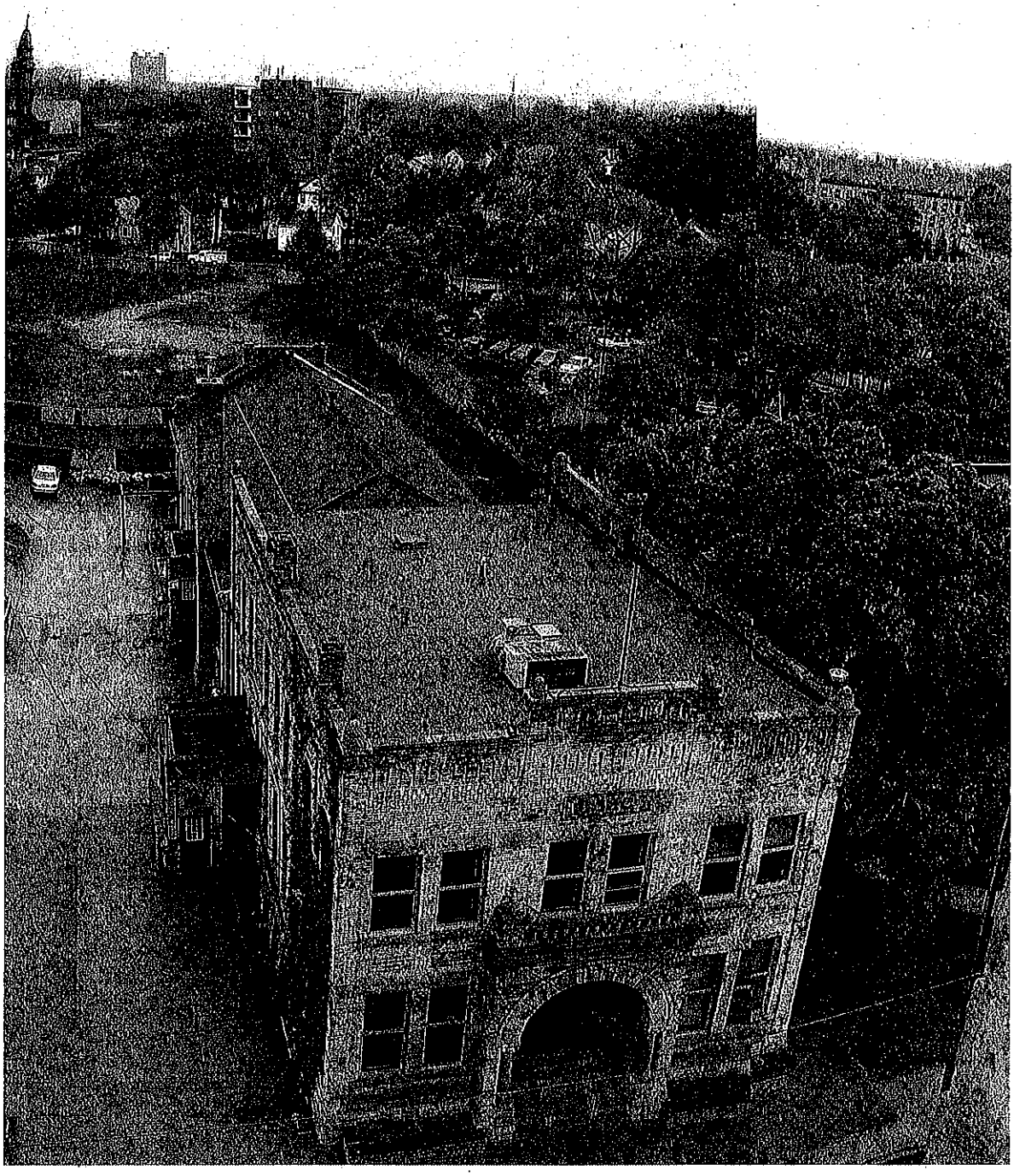

Figure 2. 1215 Marshall Street Northeast, 1972, source: CPED

Background:

The Grain Belt Brewery complex is one of the state's earliest and most enduring examples of brewing and commercial history.

In 1989 the City of Minneapolis acquired this landmark and National Register property to save it from near-certain demolition. Restoration of five of the six larger structures garnered preservation awards from the National Trust for Historic Preservation (2005), the Preservation Alliance of Minnesota (2002), the Minnesota Chapter of the American Institute of Architects (2002), the Minneapolis Heritage Preservation Commission (2002), the Minnesota Real Estate Journal (2001) and others. One historic structure, the 1893 office building, remains vacant.

Site and building conditions are creating significant water damage to the Grain Belt office building. Actions are needed to correct the water issues and better position the property for redevelopment and reuse. Staff has developed a four-phase stabilization strategy.

- Phase I involved connecting the building to the City's storm sewer grid at 13th Avenue N.E. Phase I also included some soil grading to move water away from the northern building foundation.

- Phase II work will replace an obsolete sump and pump and connect it to the newly-installed storm sewer.

Phase I and II work met the rehabilitation guidelines of *The Secretary of the Interior's Standards for the Treatment of Historic Properties* and was approved via a Certificate of No Change on April 1, 2010.

- Phase III calls for the completion of drain tile installation and sloping corrections with the window wells, allowing those to connect with the drainage system. Currently, rainwater that collects in the window wells drains through grates that appear to lead to a manhole located on the south side of the building. That manhole is old and broken and it does not appear to connect to any drainage system. Some of the windows drain via a broken and clogged pipe that runs underneath the building. Once the window wells are connected to the storm sewer system, the existing manhole on the south side of the building will be abandoned and the drains sealed (B3-B4, B11).

- Phase IV involves replacing nonhistoric roofing materials, last replaced in 1983, on the two eastern portions of the roof to stop water infiltration to the upper levels of the building. These portions are the peaked roof on the addition and the flat roof on the connector between the addition and the original office building (Figure 2).

Phases I is complete. Phases II, III and IV are pending. These latter three phases are the subject of the presentation today. Phase I and II work use $113,500 in City funds and a

$50,000 Legacy Amendment grant award. Phase III and IV work use $210,000 in City funds and a $125,000 Legacy Amendment grant award. These grants, while sizeable, represent less than 40% of what was requested in the grant proposals. Staff has studied how to accomplish the original mission with this dramatically reduced budget.

On January 18, 2011 staff presented an information item to the HPC regarding this grant amendment process. This memorandum and accompanying presentation are the next phase in staff's ongoing informational updates to the HPC on this matter.

Summary of Applicant's Proposal:

In 2008, the City retained engineering consultants Loucks Associates to analyze drainage problems at the Office Building and identify corrective measures to remedy water infiltration especially into the basement of the building. The consultant completed a report which provided the City with corrective measures and cost estimates (Attachment B). That report served as the basis for the City's two successful Legacy Amendment grant applications. During the implementation of Phases I and II, staff discovered a previously undetected sump pump within the building. A recently commissioned report by Loucks Associates confirmed staff's suspicions that adding additional sump pumps may be a cost-effective method to accomplish the original mission while keeping the project on budget and on time (Attachment C). The Loucks report recommends revising Phases II, III, and IV to reduce the drain tile installed and increase the sump pumps used.

Staff Analysis

In 1996 the Minneapolis City Council approved development objectives for the Grain Belt Brewery area, but these objectives did not include design guidelines for the rehabilitation of the buildings.

The Heritage Preservation Commission has not approved design guidelines for the subject property, but the rehabilitation guidelines of *The Secretary of the Interior's Standards for the Treatment of Historic Properties* do apply.

As proposed, the project meets the rehabilitation guidelines of *The Secretary of the Interior's Standards for the Treatment of Historic Properties.* Interior changes (drain tile and sump pump repair and installation) affect the lower level of the building. This area is a secondary space and has been heavily modified in the past, making it an excellent location to concentrate changes. Exterior changes involve re-sloping the window wells on the southern side of the building. The window wells appear to have been modified in the past and are not considered historic features by staff. Re-sloping them and reconnecting them to the storm sewer system will inhibit water infiltration into the building, better preserving the building's historic features.

Staff concurs with the revised recommendation listed in the most recent Loucks Associates report (Attachment C) and summarized above (see Summary of Applicant's Proposal).

Staff has determined that the proposed work is a minor alteration, to be reviewed by staff using a Certificate of No Change.

Staff will return to the HPC with relevant updates in the future, to include a business meeting onsite or nearby in the future.

CPED staff is currently preparing another request for proposals to market the property and adjacent Orth brewery site to potential developers who can adequately care for this historic property.

Attachments

A. Staff Report – A1-A5
B. 2008 Loucks Report – B1-B59
C. 2010 Loucks Report – C1-C2

LOUCKS ASSOCIATES

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MEMORANDUM

PROJECT: Grain Belt Office Building
Loucks Project No. 05-051

TO: Steve Maki (City of Minneapolis Community Planning & Economic Development)

FROM: Jonathan J. Donovan P.E. (Loucks Associates)

DATE: 12/14/10

SUBJECT: Grain Belt Interior Drainage Improvements

After a meeting onsite with representatives from Loucks Associates, American Engineering Testing, and Minneapolis CPED it has been determined that the most feasible option to minimize the ground water problems at the Grain Belt Office building and to be in compliance with the approved funding would be interior upgrades and improvements in addition to exterior improvements made to the south window wells. After reviewing a number of options it was determined that the upgrades and improvements described below would be the most economically feasible strategy.

The interior strategies that will be implemented as part of this project will include the upgrade of two existing sump pumps in the building. The new sump pumps will be deeper and capable of pumping more ground water than the old units. The new sump pumps will also include draintile extending out of the sump manholes. The draintile will assist in capturing additional ground water flow to the sump pumps and allow for additional area of ground water draw down. A third sump pump with draintile will be proposed on the south side of the building and located just west of the bar room. This sump pump will be constructed if the project budget allows.

The exterior strategies that will be implemented as part of this project will include the re-sloping of the window wells to allow surface runoff to drain to a catch basin to be constructed at the northeast corner of the building. The proposed catch basin will discharge to the new sump pump that will be constructed as part of this project.

LOUCKS ASSOCIATES

MEMORANDUM

TO: **Steve Maki – Community Planning and Economic Development**
City of Minneapolis

FROM: **Jeffery A. Shopek, P.E.**
Eric W. Beazley, P.E.

DATE: **August 27, 2008**

SUBJECT: **Grainbelt Office Building Drainage Study**
Loucks Project No.: 05-051B

Mr. Maki,

The purpose of this memo is to summarize our analysis, evaluation and potential corrective measures for the drainage problems at the Grainbelt Office Building located at 1215 Marshall St. NE. In general, the project consisted of evaluating drainage problems resulting in water entering the basement of the building.

The initial hypothesis pertaining to the causes of drainage problems are as follows:

- Perched groundwater seeping into the building
- Surface runoff from the site draining towards the building
- Faulty roof gutters discharging at the building foundation
- Lack of window well drainage
- Storm sewer backup from downstream piping systems

The goal of the project is to recommend potential options for solutions to identified problems. While Loucks' objective is to evaluate drainage outside of the building, our determinations include recommendations for further analysis internal to the building, which may require an architect's/mechanical engineer's opinion. The project was broken into three phases. Phase 1 was the project initiation phase, and primarily consisted of data gathering. Phase 2 was the site analysis and evaluation phase, which consisted of analyzing the data gathered in phase 1. The third and final phase involved combining the results of phase 1 and phase 2 to determine potential corrective measures for the drainage problems at the Grainbelt office building.

Phase 1 – Project Initiation

The first phase of the project involved two site visits, a compilation of existing documentation (e.g., surveys, geotechnical studies, utility record drawings, etc.) and an inquiry of historical downstream flooding issues and/or restrictive downstream capacity issues.

The first site visit completed by Loucks included a review of accessible portions of the building. The review included documentation in the form of site plan notes and photographs. The second site visit included personnel from Loucks and Utility Mapping Services (UMS) evaluating various storm sewer pipes for traceability potential. Loucks and UMS utilized various methods, such as hand held augers to determine if the targeted storm sewer pipes were blocked. It was concluded that some of the pipes would need to be cleaned prior to tracing the pipe routes and evaluating pipe functionality. Note that tracing and/or mapping of the storm sewer system was not completed as part of this project, as this work was outside the scope and budget.

Research of existing documentation unveiled existing boundary and topographic surveys of the Grainbelt office building site and portions of the surrounding properties. City as-built utility drawings (i.e., sanitary sewer, storm sewer and watermain) and City GIS databases were also reviewed for Marshall St. NE, Main St. NE and 13th Ave. NE.

Based on comments received from the City of Minneapolis, the existing City storm sewer infrastructure in Main St. NE and Marshall St. NE are undersized and over capacity. As such, during larger storm events localized flooding has been observed adjacent to the Grainbelt Office Building site. Loucks was unable to physically witness the street flooding as part of this project. This back up on the storm sewer system could potentially cause storm water to back up onto the Grainbelt site and spill into various openings (e.g., doorways, window wells, etc.) in the building.

Phase 2 – Site Analysis and Evaluation

SURFACE DRAINAGE

The surface drainage analysis consisted of identifying sub-basins draining onsite to offsite, and sub-basins that drain offsite to onsite. In addition, sub-basins were delineated for storm sewer inlets/outlets, roof gutters, window wells and relevant offsite drainage. See the existing drainage area map in Exhibit A. The result of this analysis shows that a large portion of the site, and smaller portions offsite, drain directly towards the building. Only one catch basin on the north side of the building is in place to capture this relatively large amount of runoff. There are three main resulting problems with this condition. First, the catch basin is only able to capture a portion of the site runoff due to its location. Second, the grate capacity of this catch basin is approximately one (1) cfs while the drainage to the basin in the 100-year event is approximately 13 cfs[1]. Third the rim elevation of the catch basin is only slightly lower (i.e., 0.48 feet) than the openings to adjacent window wells. Thus, due to lack of grate capacity onsite flooding may occur, which could subsequently spill over in the adjacent window wells. The sidewalk elevations on Marshall St. NE are only 0.25 feet lower than the rim elevation of 816.15 of this catch basin, and the sidewalk lies approximately 180 feet away from the catch basin, thus providing very little emergency overflow capacity for the larger storms.

WATERSHED

The project site is located within the Mississippi Watershed, which is governed by the Mississippi Watershed Management Organization. Within the watershed there are many subcatchments. The Grainbelt site is located in the southwest quadrant of its

[1] Assuming the grate is 50% clogged.

subcatchment, which is near the outlet. The outlet is located near Broadway and flows to the Mississippi River[2].

EXISTING FEATURES

There are several features of the existing site condition that may be of concern with regards to the drainage problems. Please refer to the site plan shown in Exhibit A while reading this section.

Because of physical constraints, scope and budget limitations it was not feasible to conclusively determine some as-built information of the onsite storm sewer, window well and roof drainage system. A summary of the known and undetermined information and associated assumptions is as follows:

- Catch basin along the north side of the site (Labeled as Feature A)
  - This catch basin is of primary concern, as a large portion of the site and approximately half of the office building drain to the basin. There are several pipes entering and exiting the catch basin. See Exhibit B for a detail of the structure. It is recommended that a dye test be performed on the catch basin to determine where the pipes come from and lead. The catch basin manhole on the north side of the building has three pipes entering from undetermined originations, and one pipe exiting to an undetermined destination. It is assumed the pipes entering the manhole are from directly connected roof drains. The invert elevation of the outlet pipe is approximately 805.6 and the storm sewer depth in Marshall is only 810.3. Therefore, it appears the storm sewer pipe s not connected to the storm sewer system in Marshall. The only pipe deep enough in Marshall to accept drainage from this catch basin is the 78-inch sanitary sewer pipe.
- Rain Leaders (Labeled as Feature B)
  - Several rain leaders drain the roof of the office building on the north and south sides. The rain leaders on the south side of the building drain from the roof to the south side of the retaining wall. The water exiting these leaders discharges directly at the edge of the wall and is slowly eroding the soil and the concrete wall. These roof drains also leak water at the building foundation, and are in need of repair.
  - Rain leaders draining the roof on the north side of the building are either directly connected to the previously described catch basin or surface drain to the catch basin labeled Feature A. Again, these roof drains leak water at the building foundation, and are in need of repair.
- Window wells (Labeled as Feature C)
  - Several windows wells surround the building, which provide access to basement windows. Most of these window wells are drained by grates. however, it is unknown where the pipes connect. The wells vary in depth from two feet to six feet, and in general contain leaves and other debris preventing efficient drainage. Please note the following assumptions:
    - The existing storm sewer capturing rain water entering the window wells along the south and east sides of the building are directed to

[2] Reference: City of Minneapolis Local Storm Water Management Plan

the public sewer system via 1) the catch basin on the north side of the building 2) a manhole structure on the south side of the building (labeled as feature G), or 3) via a direct connection.
    - Certain window wells drain via pipe that runs underneath of the building.
    - The existing underground roof/window well drainage system is old, potentially broken and clogged.
- Retaining wall (Labeled as Feature D)
    - A large concrete retaining wall runs along the south side of the building. The wall varies in height from zero feet to sixteen feet. The window wells along the southeast side of the building tie into this wall. Three rain leaders are discharging at the top side of the wall and are causing the surrounding soil and the actual concrete to erode or spall.
- Existing sanitary sewer connection to the building (Labeled as Feature E)
    - The pipe shown as Feature "E" on Exhibit A is the assumed sanitary sewer service connection to the building. However, there was no visual evidence of the pipe during site visits and where this pipe actually enters the building, and if other pipes (such as roof drains or the outlet from Feature A) tie into the sanitary sewer service line.
- Sump Pump (Labeled as Feature F)
    - A sump pump is located inside the building along the north wall and towards the east end of the building. Connections to, and from, the pump could not be seen upon removing the sump pump cover in the basement due to standing water in the pump basin. Potential connections include draintile and window well drains.
- Manhole on South Side of Building (Labeled as Feature G)
    - A 21-inch Manhole exists on the south side of the office building in the third window well from the southeast corner of the building. Investigation of this manhole revealed at least two feet of standing water, sludge and skim oil in the bottom. As a result, no pipes entering or exiting the structure could be seen.
- Storm Sewer in Marshall St. NE(Labeled as Feature H)
    - A high point exists in Marshall St. NE (Marshall) north of the Grainbelt building, approximately halfway between the Grainbelt Office Building and 13th Ave. NE. (13th). Stormwater draining north from this high point is collected in the public storm sewer system at the intersection of Marshall and 13th, which ultimately drains westerly towards the Mississippi River. Stormwater draining south from the high point is collected by a public storm sewer system immediately adjacent to the Grainbelt building. See Exhibit C for the following discussion.
        - **Existing CBMH I** – An eight (8") inch PVC pipe exits CBMH I to the southwest. It is unknown where this pipe leads.
            - RIM=814.82
            - INV=810.32

- **Existing CBMH II** – A six (6″) inch PVC pipe enters CBMH II from the southeast. A ten (10″) clay pipe exits CBMH II to the west. The 10-inch clay pipe leads to CBMH III. The Grainbelt building is located northeast of this catch basin.
  - RIM=814.77
  - INV=811.07

  Note that this catch basin is the most logical connection for drains from the window wells along the south side of the building. However, window well bottom elevations along the south side of the building are between approximately 813.0′± and 814.0′±. A hypothesis can be made that the manhole (labeled as Feature G) connects to this CBMH either directly or indirectly.
- **Existing CBMH III** – A ten (10″) inch clay pipe from CBMH II enters CBMH III from the west. A nine (9″) inch clay pipe exits CBMH III to the east and connects CBMH III to MH IV.
  - RIM=814.72
  - INV=809.77
- **Existing MH IV** – An eight (8″) inch pipe enters MH IV from the north. The upstream connection of this pipe could not be determined. It could be speculated that this eight inch pipe is connected to existing CBMH I, but this could not be determined. A nine (9″) inch clay pipe enters MH IV from the east from CBMH III. A six (6″) inch PVC pipe enters MH IV from the west. The upstream connection of this pipe could not be determined. A fifteen (15″) inch pipe exits MH IV to the south.
  - RIM=815.22
  - INV=809.22

GROUNDWATER

- A geotechnical report prepared by Stork Twin City Testing Corporation dated July 27, 2005 is attached in Exhibit D. The important features of the geotechnical report for this study are the soil borings and the recommended building perimeter draintile design. Of particular importance are borings B-1, B-2 and B-3, as these are in closest proximity to the building. The following table summarizes the existing surface elevation and groundwater elevation at each of these borings.

Boring #	Existing Surface Elevation (ft)	Groundwater Elevation (ft)	Depth to Groundwater ft)	Soil Type Above GW	Soils Type Below GW
B-1	816.9	807.1	9.8	Sand and Silty Sand	Clay
B-2	818.4	812.4	6.0	Sand and Silty Sand	Silty Sand
B-3	817.7	813.2	4.5	Sand	Clay

Note that the finish floor elevation of the first floor is 820.44 feet and the finish floor elevation of the basement is approximately 810.0± feet. See Exhibit B for a cross section of

the site showing the surface elevation and groundwater elevation in relation to the building floor elevations.

This groundwater system is a perched collection of groundwater that drops approximately six feet in elevation from the east side of the building to the west side. This allows the groundwater to flow below the west portion of the structure. The aquifer generally drains across the site from east to west (i.e., Main St. NE to Marshall St. NE). The high groundwater elevations may be one of the causes of the wet basement issues on the east side of the Grainbelt Office building.

Phase 3 – Potential Corrective Measures

As noted in the beginning of this report each of the following hypothesized conditions contribute to the drainage problems at the Grainbelt Office Building:

- Perched groundwater seeping into the building
- Surface runoff from the site draining towards the building
- Faulty roof gutters discharging at the building foundation
- Lack of window well drainage
- Storm sewer backup from downstream piping systems

It is not one of these conditions that are causing the water problems at the Grainbelt site, but each of them is causing problems in different ways. As such, no one solution will work to alleviate the drainage problems at the Grainbelt Office Building. Rather, a combination of actions should be implemented.

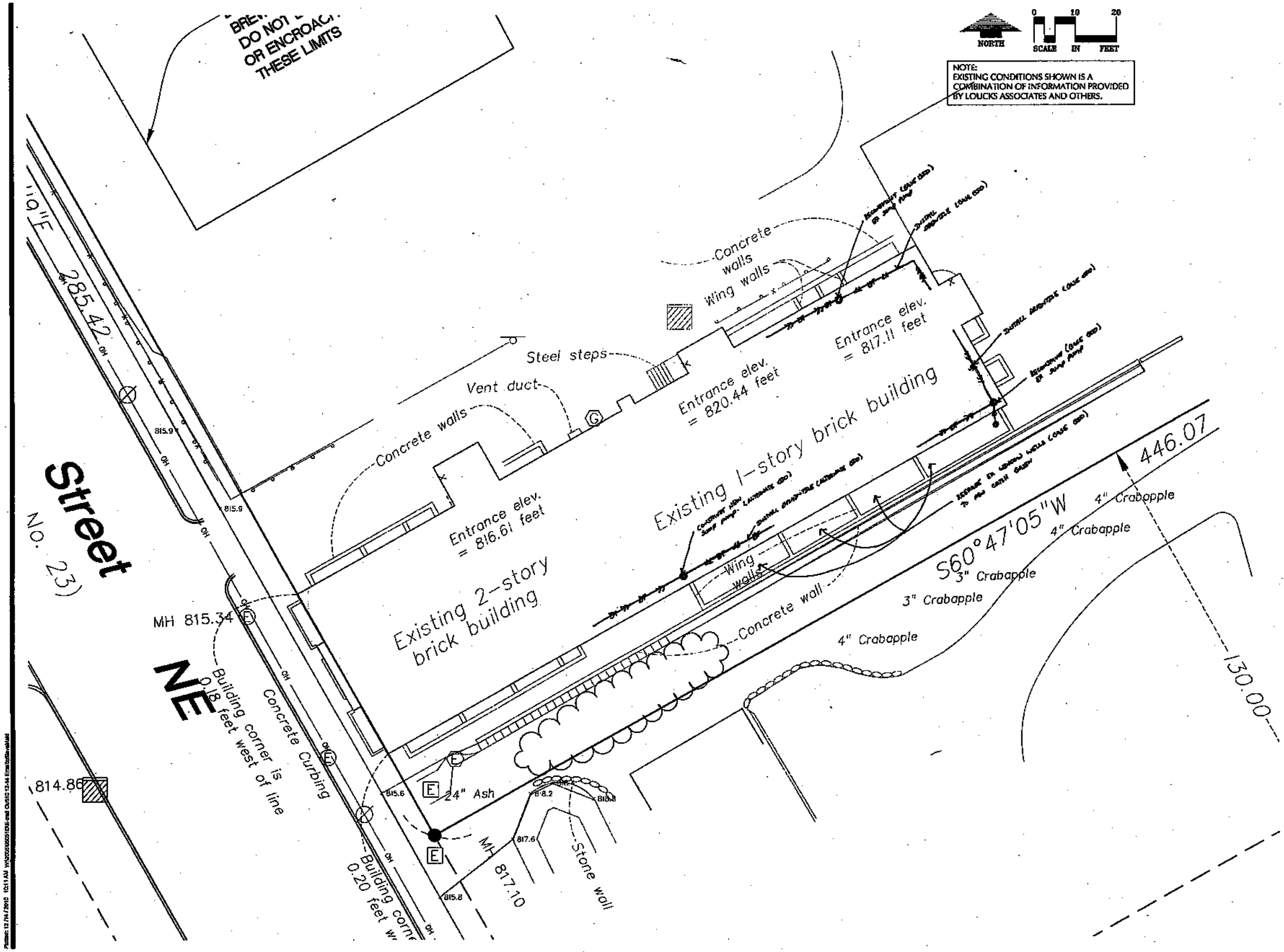
It is not one condition that is causing all of the water problems at the Grainbelt site, but a combination of conditions are causing problems in different ways. As such, no one solution will work to alleviate the drainage problems at the Grainbelt Office Building. Overall is appears there is no easy, quick solution to resolve the water problems at the Grainbelt site. Multiple potential design remedies have been identified to mitigate the drainage problems at the Grainbelt Office building. Some of the following design solutions are temporary in nature and some are considered permanent. A temporary solution is defined as that may be changed or removed as part of future development. It is important to note that these recommendations may be implemented individually or as a combination of one or more. In addition, an effectiveness rating has been given to each of the following potential solutions. See Exhibit E for a summary of the effectiveness rating for each potential solution within several categories. The effectiveness rating is based on a scale of one (1) to five (5), with 5 being the most effective. Several categories have been evaluated for each alternative solution and given a mutually exclusive effectiveness rating. Exhibit F contains a concept design for each of the remedies described below.

A – Surface Runoff Management (Temporary or Permanent)

Purpose: Provide storm water storage to slow the rate of discharge from the site, thereby more closely matching the capacity of the existing storm sewer infrastructure.

A-1 Dry Pond with Clay Lined Bottom

- Description
    - A two foot deep dry pond may be constructed at the northeast corner of the existing office building. The pond typical section will generally consist of two feet of sand underlain by draintile wrapped in a geotextile sock. The draintile would be connected to the existing storm sewer manhole/catch basin along the north side of the building. This catch basin is assumed to



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NORTH
0 10 20
SCALE IN FEET
NOTE: EXISTING CONDITIONS SHOWN IS A COMBINATION OF INFORMATION PROVIDED BY LOUCKS ASSOCIATES AND OTHERS.
Concrete walls
Wing walls
Steel steps
Vent duct
Concrete walls
Entrance elev. = 817.11 feet
Entrance elev. = 820.44 feet
Entrance elev. = 816.61 feet
Existing 1-story brick building
Existing 2-story brick building
Wing walls
Concrete wall
446.07
S60°47'05"W
4" Crabapple
4" Crabapple
3" Crabapple
3" Crabapple
4" Crabapple
130.00
24" Ash
Stone wall
MH 817.10
817.6
815.6
815.8
815.9
MH 815.34
Building corner is 0.18 feet west of line
Concrete Curbing
Building corner 0.20 feet w…
814.86
285.42
Street
NE
No. 23)

Project Name:
GRAIN BELT OFFICE
PHASE 1
DRAINAGE &
STORM SEWER
IMPROVEMENTS

Minneapolis, Minnesota

City of Minneapolis
1215 Marshall Street NE
Minneapolis, MN 55413

Minneapolis
City of Lakes

Professional Services:
LOUCKS ASSOCIATES

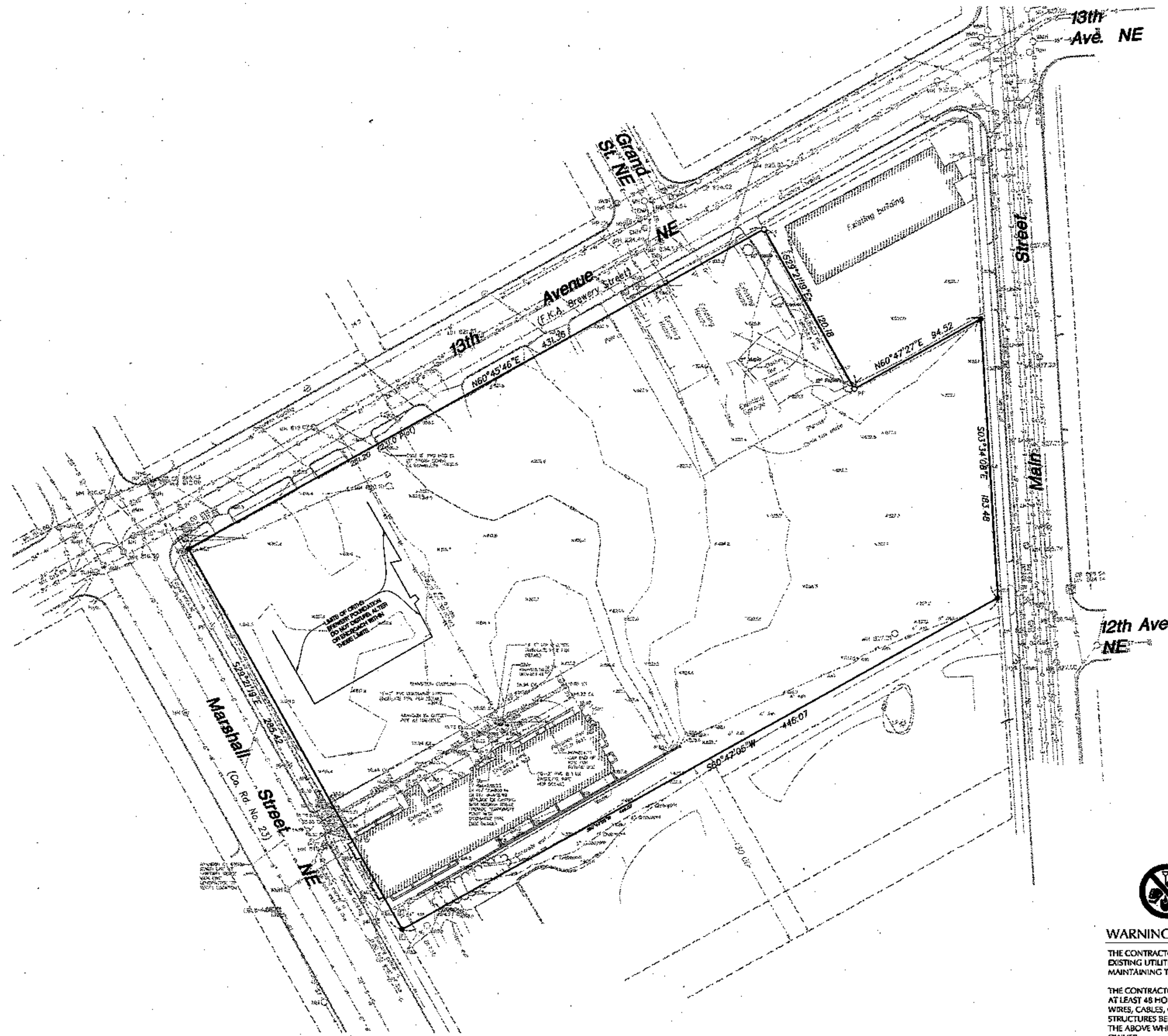
Professional Signature:
Jonathan J. Donovan - PE

Quality Control:
MDC

Sheet Title:
SITE PLAN
BUILDING DETAIL

Project No.: 05051D

Sheet No.: C2-1



NORTH

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SCALE IN FEET

NOTE:
EXISTING CONDITIONS SHOWN IS A COMBINATION OF INFORMATION PROVIDED BY LOUCKS ASSOCIATES AND OTHERS.

CALL BEFORE YOU DIG!
Gopher State One Call
TWIN CITY AREA: 651-454-0002
TOLL FREE: 1-800-252-1166

WARNING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND / OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

Project Name:
GRAIN BELT OFFICE PHASE 2 DRAINAGE & STORM SEWER IMPROVEMENTS

Minneapolis, Minnesota

City of Minneapolis
1215 Marshall Street NE
Minneapolis, MN 55413

Minneapolis City of Lakes

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CADD Qualification:

Submittal:
1-14-11 Bid Exhibits

Professional Signature:

Quality Control:
ID MDC

Sheet Index:
C1-1 Existing Conditions
C2-1 Demolition Exhibit
C3-1 Grading & Drainage Exhibit
C4-1 Utility Exhibit
C5-1 Details

Sheet Title:
EXISTING CONDITIONS

Project No.: 05051E

Sheet No.: C1-1

Exhibit 11

Plotted: 01/14/2011 11:27 AM